Mathematics
Kindergarten

Program Goal

The learner will develop and integrate mathematical strategies necessary to become a logical thinker, problem solver, competent communicator, responsible, successful, life-long learner and productive citizen in an ever-changing world. The learner will apply math concepts to real-world situations including those related to human dignity and Catholic Social Teaching.

Grade Level Goal

In Kindergarten, the learner will demonstrate an understanding of beginning math concepts through active participation and exploration using a variety of math tools. The learner will develop competency in counting, recognizing and writing numbers

Content Criteria

Functions

- The learner will demonstrate the ability to recognize similarities and differences in objects.
- The learner will sort and classify objects using various attributes.
- The learner will identify simple patterns.
- The learner will demonstrate how to extend a pattern.
- The learner will demonstrate how to create a pattern.

Measurement

- The learner will identify and describe characteristics of two-dimensional shapes.
- The learner will demonstrate the ability to recognize line symmetry.
- The learner will identify common U.S. currency.
- The learner will practice telling time to the hour.
- The learner will identify common measurement tools and how they are used.
- The learner will use non-standard units of measurement to measure a variety of items.
- The learner will demonstrate knowledge of comparative language when measuring.
- The learner will demonstrate the ability to estimate.

Data Analysis

- The learner will collect, organize, and display information using tallies, graphs, and charts.
- The learner will construct, read, and interpret a variety of graphs.
- The learner will solve problems using information found in graphs and charts.

Numeration

- The learner will identify numbers to 30.
- The learner will write numbers to 30.
- The learner will order and compare numbers to 20.
- The learner will demonstrate one-to-one correspondence through 30.
- The learner will demonstrate the concept of zero.
- The learner will connect number words (verbal) and numerals to the quantities they represent using manipulatives and pictures including symbols (0-10).
- The learner will count forward to 100.
- The learner will count backward from 20.
- The learner will count by 10's to 100.
- The learner will practice skip counting.
- The learner will demonstrate the ability to recognize fractions as being equal parts of a whole.
- The learner will demonstrate an awareness of place value.

- The learner will demonstrate the ability to use ordinal numbers.

Operations

- The learner will perform and describe simple addition and subtraction using objects or illustrations.
- The learner will identify mathematical symbols for addition, subtraction, equal to.
- The learner will demonstrate knowledge of basic addition facts through 5.
- The learner will count forward from any given number (0 to 100).
- The learner will use a variety of math tools to solve problems.

Applications

- The learner will identify the steps in the problem solving process.
- The learner will apply the steps in the problem solving process.

Instructional Criteria

- Students will comprehend vocabulary.
- Students will exhibit good listening skills.
- Students will exhibit turn-taking skills.
- Students will show responsibility when using equipment and manipulatives.
- Students will be able to make comparisons.
- Students will participate in class discussions.
- Students will be able to work independently in small and large group settings.
- Students will engage in a variety of hands-on activities including the use of technology when appropriate.

Scope

I. Functions
   A. Same and different
      1. Size
      2. Color
      3. Weight
      4. Shape
   B. Sort and classify
      1. Size
      2. Color
      3. Weight
      4. Shape
   C. Identify simple patterns
      1. AB
      2. ABC
      3. AABB
      4. AAB
      5. ABBA
   D. Extend patterns
      1. Pattern blocks
      2. Unifix cubes
      3. Pictures
      4. Various manipulatives
      5. Motions
      6. Sounds
   E. Create patterns
      1. Pattern blocks
      2. Unifix cubes
      3. Pictures
      4. Various manipulatives
      5. Motions
      6. Sounds

II. Measurement
   A. Identify and describe two-dimensional shapes
      1. Circle

2. Oval
3. Square
4. Triangle
5. Rectangle
6. Diamond/rhombus
7. Hexagon
8. Octagon
9. Trapezoid

B. Symmetry
1. Mirror image
2. Line of symmetry of a shape

C. Identify common currency
1. Penny
2. Nickel
3. Dime
4. Quarter
5. One dollar bill

D. Telling time
1. Hour
2. Yesterday, today, tomorrow
3. Morning, afternoon, evening
4. Days of the week
5. Months of the year
6. Digital vs. analog clocks

E. Measurement tools and use
1. Clocks, calendars (time)
2. Thermometers (temperature)
3. Rulers, tape measures, yard stick (Length)
4. Scales and balances (weight)
5. Cups, pints, liters, gallons (volume)

F. Non-standard units of measurement
1. Unifix cubes
2. Paper clips
3. String
4. Hands, fingers, feet
5. Various manipulatives

G. Comparative language

1. Long, longer, longest
2. Heavy, heavier, heaviest
3. More, less
4. Hot, cold
5. Short, shorter, shortest

H. Estimation
1. Time
2. Size
3. Weight
4. Length
5. Quantity
6. Temperature

III. Data Analysis

A. Collect, organize, and display information
1. Tallies
2. Graphs
3. Charts

B. Graphs
1. Real
2. Picture
3. Bar

C. Solve problems
1. Graphs
2. Charts

IV. Numeration

A. Identify numbers to 30

B. Write numbers to 30

C. Order and compare numbers to 20
1. Greater than
2. Less than
3. Equal to

D. One to one correspondence to 30
1. Touch and count objects
2. Counting blocks

E. Concept of 0 (zero)
1. Numeral
2. Zero is nothing

F. Connect words and numerals to quantities
    1. Manipulatives
    2. Pictures
    3. Symbols (0-10)
G. Count to 100
H. Count backward from 20
I. Count by tens to 100
J. Skip count
    1. Two's
    2. Five's
K. Fractions
    1. Whole
    2. Half
    3. Quarter
    4. Third
L. Place value
    1. Ones
    2. Tens
    3. Hundreds
M. Ordinal numbers
    1. First – tenth
    2. Calendar dates
    3. Order of events
    4. Position

V. Operations
A. Addition and subtraction
    1. Using objects
    2. Illustrations
B. Mathematic symbols
    1. Plus (+)
    2. Minus (-)
    3. Equal (=)
C. Addition facts through the sum of 5
D. Count forward from any given number (0-100)
E. Math tools
    1. Calculator
    2. Manipulatives

3. Computer
4. Paper/pencil
5. Measurement tools

VI. Applications
   A. Problem solving steps
      1. Identify problem
      2. Strategies
      3. Apply appropriate strategy
      4. Solve problem
   B. Apply problem solving process